

Michigan

Soybean Performance Report

1978

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The Michigan Soybean Performance Report — 1978 provides information to farmers on the relative performance of many varieties available in Michigan.

Comprehensive variety trials were conducted in the southern peninsula at two locations, one in southeastern and one in central Michigan. Smaller trials were conducted in five other Michigan soybean growing areas. Results presented in this publication are designed to aid producers in selecting appropriate varieties for planting in 1979.

Testing procedure

Commercial entries were obtained voluntarily from seed companies or their representatives. Names and addresses of these companies and their varieties are presented in Table 9. Seed of public varieties were supplied by the Michigan Foundation Seed Association. The two comprehensive trials were located in Gratiot and Monroe Counties, the five smaller trials in Bay, Berrien, Calhoun, Macomb, and Tuscola Counties.

Extension and farmer cooperators, planting and harvesting dates, fertilization practices, and soil type at the seven locations are listed in Table 1.

At all locations, each entry was a plot of four rows, 17 feet long. Row spacing was 28 or 30 inches and seeding rate was approximately 8 seeds per foot of row. Planting depth was 1½ inches. Each entry was replicated three times and randomized in the field. Thirteen feet of each of two center rows of a plot were harvested for yield determination.

Four-year yield data is presented for varieties in

the two comprehensive trials. Previous years' trial locations were as follows: 1977 — Monroe and Eaton County; 1976 — Lenawee and Eaton County; and 1975 — Monroe and Ingham County. Testing procedures in previous years were similar to those in 1978.

Evaluation of characters

Descriptions of varietal characteristics are presented below.

Yield — Harvested seed was dried to a uniform moisture. Yields were expressed in bushels per acre at 13% moisture.

Maturity Date — An entry was considered mature when the pods had turned brown and would crack under finger pressure. Dates were recorded by month and day.

Lodging — Lodging ratings were as follows: 1 = all plants upright; 2 = slight lodging; 3 = plants lodged at 45° angle; 4 = severe lodging; 5 = all plants completely flat. The ratings were made just prior to harvest.

Height — Plant height was measured in inches from the soil surface to the top node (with at least one pod) of the main stem. The measurement was made in advance of harvest.

Seed Size — The number of seeds per pound was determined as an expression of seed size. The determination of seeds per pound was made on cleaned seed.

Results

Results of the 1978 variety trials are presented in Tables 2 through 8. Values presented are averages of the three replications at each location.

Growing conditions were extremely variable among locations. Droughty conditions and hail caused poor yields in the Macomb County trial. Hail and severe weed infestations, causing harvesting problems, resulted in incomplete yield data for the Berrien County trial. Deer damage and soil variability among plots in Calhoun County produced variation across replications resulting in no significant differences among varieties.

LSD (least significant difference) values for yield are presented at the bottom of Tables 2 through 8. Two varieties that may have similar genetic potential for yield may nevertheless differ in yield because of variations in soil fertility and other environmental characteristics among plots at trial locations. To determine if two varieties actually differ in their genetic potential for yield, LSD values can be used. If the difference between two varieties is greater than the LSD (.05) value there is 95% or greater probability that those two varieties actually differ in performance. For example, in the Tuscola County trial (see Table 8) the LSD value is 3.5 bu/A. Amsoy 71 yielded 32.3 bu/A whereas Evans yielded 24.3 bu/A. The difference is 8.0 bu/A which is greater than the LSD value, thus Amsoy 71 performed significantly better than Evans. Conversely, the yields of Steele and Evans differ by only 1.1 bu/A which is less than the LSD value. Therefore, the small difference between these two varieties could be the result of environmental factors or experimental error.

Selecting a variety

Scientifically conducted yield trials on an individual's farm for several years would provide the best information on variety performance. Because such trials are impractical for each farmer to conduct, results of variety trials conducted by the university in combination with other helpful information and past experiences can be used by farmers to select a variety.

The primary consideration in selecting a variety is harvestable yield. Yield performance over several years should be considered, if available, when evaluating a variety. Preference should be given to data obtained in the nearest variety trial. However, all trials should be considered in determining a variety's performance under various environmental conditions.

Considerations other than yield are important in selecting a variety and in some cases result in choosing a variety with only moderate performance. Selecting a variety with a proper maturity date is of

prime importance. From past weather data, farmers can determine the percent probability of when the first frost will occur in the fall. Choosing a variety that will reach maturity (see maturity date definition) just prior to the average date of the first damaging frost will normally result in best yields. Farmers growing soybeans for the first time may wish to contact neighbors to determine what varieties typically mature before frost in their area. If large acreages are planted to soybeans, consider growing varieties of different maturities to provide staggered maturity dates to allow for a longer harvest season.

The degree of lodging varies among varieties. Farmers who have experienced lodging in the past and have had problems combining these beans may want to select a more lodging resistant variety. Alternately, a variety susceptible to lodging may be planted at a slightly lower population in an effort to increase standability. Data on lodging should be evaluated over all locations to determine a particular variety's lodging characteristics.

Seed size should be noted when selecting planting rates. Planting rates based on number of seeds per foot of row eliminates seed size bias.

Several diseases have caused yield reduction in Michigan. Phytophthora root rot has been a serious problem in some areas. Some varieties exhibit field tolerance to one or more of the races of this disease. Seed dealers can usually provide growers with information on Phytophthora and other disease resistant characteristics of the varieties they sell.

It is often beneficial for growers to select a few good varieties for planting each year. Yield determination and careful field evaluation during the growing season will add to the grower's knowledge of varietal performance and allow better selection in following years.

Use of data

All data presented, except the 1975-1978 average, are of varietal performance in 1978. Order of the varieties in no way implies superiority of one over another.

The presentation of data for the entries tested does not suggest approval or endorsement of varieties by the authors or by those responsible and involved with conducting the performance trials.

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The authors regret any errors that may appear in this bulletin.

Table 1. Variety Trial Information.

County	Coop. Exten. Service Cooperator	Farmer Cooperator	Address	Soil Type	Planting Date	Fertilization	Harvest Date
BAY	Russel Howes Arenac County	Wm. Mueller & Son Elevator	Pinconning	Kawkawlin loam	5-23	200 lbs. 9-18-9 200 lbs. 15-15-15	10-17
BERRIEN	Clare Musgrove	Robert Lamberton	2902 Creek Rd. Niles	Ockley-Oshtemo silt loam	5-26	200 lbs. 6-24-24	10-12
CALHOUN	James Swart	Jeff Fountain	16086 22½ Mi. Rd., Marshall	Hillsdale sandy loam	5-17	200 lbs. 9-23-30 30 lbs. Sul-Po-Mg.	9-29
MACOMB	Simo Pynnonen St. Clair County	Roy Grennia	Kronner Road Richmond	Brookston-Conover	5-24	200 lbs. 0-0-60 25-100-38	10-9
TUSCOLA	Don Kebler	Charles Witkovsky	Cleaver Road Caro	Parkhill silt loam	5-24	150 lbs. 15-30-15	10-17
GRATIOT	Gregory Varner	Clarence Reeves	Baldwin Road Ithaca	Parkhill loam	5-22	250 lbs. 6-24-24	10-5, 28, 29
MONROE	Paul Nevel	Frank Smith Jr. & Sons	Indian Trail Carleton	Toledo silty clay loam	5-25	425 lbs. 6-24-24	9-30, 10-12, 21

Table 2. Southeastern Michigan, 1978 — MONROE COUNTY.

Variety	1978 Yield (Bu/A)	1975-1978 Avg. Yield (Bu/A)	Maturity Date	Lodging	Height (inches)	Seed Size (seeds/lb)
Hark	22.2	32.5	9-21	1.1	30	2592
Harosoy 63	28.3	33.8*	9-19	1.4	38	2291
Corsoy	30.7	39.8	9-17	1.0	34	2090
Beeson	30.1		9-19	1.4	33	1507
Amsoy 71	30.5	37.6	9-21	1.5	34	2387
Hodgson	25.1	33.0	9-16	1.1	28	2387
Evans	24.4	28.6	9-19	1.0	31	2387
Steele	25.8	32.3	9-18	1.0	30	2016
Coles	21.6		9-21	1.1	30	2016
APS150	23.1		9-23	1.3	27	2387
APS200	25.2		9-26	1.5	30	2387
JFI 114	31.9		10-2	2.0	34	2160
JFI 112	25.8		9-20	1.5	34	2387
JFI 106 SB4	25.6		9-25	1.4	32	2520
JFI 105	32.0		10-3	1.5	34	2110
JFI 104	29.5		9-19	1.0	31	2653
JFI 103	27.9		9-19	1.1	26	2362
SRF 150P	24.1	34.2	9-19	1.1	30	2835
SRF 200	31.7	39.3	9-20	1.2	34	2926
SRF 307P	34.1		10-1	2.3	36	2520
Pfizer CX155	26.3		9-20	1.3	30	2592
Pfizer EC179	26.1		9-20	1.3	32	2653
Pfizer CX275	36.3		9-27	1.3	31	2268
Pfizer CX276	30.0		9-29	1.7	34	2413
Pfizer CX290	28.0		9-24	1.5	32	2362
Pfizer CB200	27.2		9-18	1.2	32	2684
Pfizer CB244	24.3		9-24	1.6	34	2520
ACCO 201	23.5		9-19	1.5	26	2548

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Monroe County, (Continued)

Variety	1978 Yield (Bu/A)	1975-1978 Avg. Yield (Bu/A)	Maturity Date	Lodging	Height (inches)	Seed Size (seeds/lb)
A141	24.4		9-20	1.2	33	2387
A143	26.5		9-19	1.4	33	2452
A232	32.2		9-26	1.8	32	2668
Agripro AP10	26.9		9-18	1.0	37	2520
Agripro 14	25.2		9-16	1.4	29	2637
Agripro 18	25.8	32.5*	9-19	1.5	33	2160
Agripro 20	26.7	37.1	9-24	1.5	30	2268
EX00330	29.8		9-20	1.4	31	3024
EX00136	26.3		9-19	1.1	29	2835
NK Blend 31	23.5		9-18	1.4	32	2592
NK S1492	27.4	36.0*	9-22	1.1	27	2749
NK S1346	18.2	32.0	9-16	1.0	22	2492
NK Blend 42	23.1		9-17	1.1	23	2520
NK Blend 52	27.6		9-24	1.5	31	2684
NK S1474	27.4	38.7	9-24	2.0	34	2668
Pride B216	26.7	38.9	9-20	1.3	30	2668
Pride B186	17.7	31.1	9-17	1.1	31	2452
P0877	19.0		9-17	1.0	23	2622
P3100	29.9		9-20	1.1	30	2835
P105-P	23.8		9-22	1.2	35	2592
P3105	31.2	40.1*	9-29	1.6	33	2520
P-85	19.2	23.9*	9-17	1.0	22	2387
P2877	28.5		9-25	1.1	30	2716
P118-11	24.7	30.2*	9-19	1.3	28	2668
P2477	27.4		9-22	1.1	30	3812
P1677	28.4		9-17	1.0	25	2835
J98	26.3	34.9	9-17	1.1	33	2700
J102A	28.6		9-19	1.3	31	2607
J106	23.8		10-3	1.4	31	2268
VS135	31.1		9-20	1.0	35	2668
VB200	31.2		9-27	1.5	34	2592
VS285	31.2	36.8*	10-3	2.2	35	2326
Asgrow A1564	28.1		9-17	1.3	30	2452
Asgrow A2440	27.1		9-20	1.0	31	2668
Asgrow A2575	27.7		9-16	1.0	31	2668
Asgrow A2656	31.8		9-20	1.5	34	2400
Beam	25.7		9-20	1.8	32	2871
Viking	30.3		9-26	1.7	33	2749
V.R.6028	31.4		9-25	1.6	35	2577
Burr	22.1		9-30	1.9	34	2452
Classic I	28.3		9-24	1.7	32	2835
FFR 223	34.6		9-21	1.7	34	2520
FFR 338	35.6		10-2	1.5	35	2534
FFR 1050	32.9		10-2	1.9	34	2592
LSD (.05) =	7.5					

*1976-78 three year averages only

Table 3. Central Michigan, 1978 — GRATIOT COUNTY.

Variety	1978 Yield (Bu/A)	1975-1978 Avg. Yield (Bu/A)	Maturity Date	Lodging	Height (inches)	Seed Size (seeds/lb)
Hark	38.8	34.8	9-23	1.3	34	2160
Harosoy 63	33.8		9-28	2.0	39	1972
Corsoy	42.3	40.1	9-27	2.4	37	2268
Beeson	53.2		10-8	2.4	39	1890
Amsoy 71	40.2	38.2	10-6	2.5	41	2062
Hodgson	42.4	41.5	9-22	2.0	35	2268
Evans	34.3	33.6	9-22	1.5	34	2362
Steele	33.7	33.2	9-22	1.8	37	2016
Coles	43.8		9-25	2.6	39	1898
APS150	38.5		9-24	2.0	34	1989
APS200	44.1		10-8	2.3	37	2043
JFI 112	39.7		10-1	2.5	38	2160
JFI 106 SB4	41.8		9-29	2.8	38	2291
JFI 105	44.6		10-12	2.0	38	2150
JFI 104	41.2		9-20	1.6	34	2268
JFI 103	37.3		9-22	1.5	33	2081
SRF 150P	41.6	39.8	9-25	1.0	34	2268
SRF 200	42.7	36.9	9-30	2.3	37	2246
SRF 307P	47.8		10-15	5.0	45	2268
Pfizer CX155	38.5		9-28	2.3	36	2268
Pfizer EC179	37.4		10-4	2.0	37	2268
Pfizer CX275	43.4		10-5	3.3	40	2160
Pfizer CX276	41.5		10-5	3.0	42	2268
Pfizer CX290	41.2		10-9	2.1	40	2213
Pfizer CB200	44.2		10-7	3.3	42	2387
Pfizer CB244	45.8		10-12	2.5	37	2160
ACCO 101	31.2		9-23	1.9	36	2062
ACCO 201	38.8		9-28	1.8	35	2016
A141	40.9		9-23	2.0	37	2150
Agripro AP10	39.4		9-21	1.0	32	2213
Agripro 14	41.7		9-23	2.5	33	1955
Agripro 18	41.3		9-27	1.9	37	2140
Agripro 20	38.4		10-9	2.4	38	1930
NK Blend 31	33.0		9-21	2.0	35	2520
NK S1492	43.1	40.7*	9-30	2.0	35	2326
NK S1346	36.8	40.5	9-20	1.0	27	2268
NK Blend 42	39.7		9-20	1.5	34	2268
NK Blend 52	44.8		10-5	2.7	38	2268
NK S1474	41.3	41.8	10-5	3.6	40	2213
Pride B216	43.7	41.2	9-27	1.5	37	2160
Pride B186	37.7	36.0	9-21	1.8	36	2268
P0877	27.0		9-21	1.8	32	2362
P3100	32.7	37.2*	10-5	2.0	35	2160
P105-P	45.3		10-1	2.1	37	2062
P3105	42.1	39.6*	10-9	3.4	41	2268
P-85	31.8	32.7*	9-20	1.0	29	1972
P2877	40.7		10-7	2.1	39	2213
P118-11	36.8	37.8*	9-25	1.8	30	2387

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Gratiot County, (Continued)

Variety	1978 Yield (Bu/A)	1975-1978 Avg. Yield (Bu/A)	Maturity Date	Lodging	Height (inches)	Seed Size (seeds/lb)
P2477	43.2		10-5	2.5	40	2062
P1677	42.4		9-26	1.4	32	2835
J98	41.4	41.7	10-4	2.0	38	2213
J102A	40.5		10-2	2.2	36	2326
J106	42.4		10-9	2.4	38	1822
VB100	44.2		9-24	1.8	36	2213
VS135	41.5		9-28	2.4	38	2303
VB200	44.1		10-4	2.3	41	2160
VS245	40.0	38.0*	10-2	2.4	38	2375
Asgrow A1564	33.2		9-25	1.4	34	2110
Asgrow A2440	31.6		10-4	1.9	35	2268
Asgrow A2575	40.7		10-1	1.1	37	2160
Asgrow A2656	44.8		10-4	2.2	35	2062
Beam	36.2		9-30	2.0	34	2268
Viking	39.9		10-5	2.2	37	2213
V.R.6028	39.9		10-6	2.4	41	2062
LSD(.05) =	7.4					

*1976-78 three year averages only

Table 4. BAY COUNTY.

Variety	Yield (Bu/A)	Maturity Date	Height (inches)	Lodging
Amsoy 71	37.8	9-29	42	2.3
Beeson	38.5	10-1	38	1.3
Coles	35.6	9-20	33	1.3
Corsoy	36.2	9-23	41	2.5
Evans	36.7	9-9	32	1.2
Hark	34.8	9-21	36	1.0
Harosoy 63	31.0	9-22	44	3.5
Hodgson	42.6	9-19	33	1.2
Steele	41.6	9-12	34	1.2
SRF 150P	44.6	9-20	34	1.0
Agripro 10	38.8	9-13	34	1.0
Agripro 14	42.9	9-19	38	1.5
Agripro 18	40.6	9-21	35	1.3
Viking	35.9	9-25	40	1.8
Pride 216	40.5	9-26	36	1.3
Beam	40.5	9-29	37	1.3
Wells	33.1	9-26	34	1.3
Jacques 98	37.8	9-26	33	1.5
Jacques 104	38.6	9-30	37	1.8
Asgrow 2440	41.8	9-25	38	1.5
LSD (.05) =	7.9			

Table 5. BERRIEN COUNTY.

Variety	Yield (Bu/A)	Maturity Date	Height (inches)	Lodging
Amsoy 71	—	9-25	34	2.2
Beeson	—	9-27	30	1.8
Coles	27.3	9-21	32	2.2
Corsoy	27.3	9-22	34	2.2
Evans	—	9-14	29	1.0
Hark	—	9-22	30	1.8
Harosoy 63	—	9-23	34	2.8
Hodgson	—	9-19	28	1.3
Steele	—	9-17	32	1.5
SRF 150P	—	9-20	27	1.0
SRF 200	22.0	9-26	30	1.3
SRF 307P	—	10-2	39	4.0
Peterson 3105	25.0	10-1	35	2.7
Wayne	23.4	10-2	36	3.5
NK S1474	—	9-27	34	2.0
Agripro 18	23.4	9-23	32	1.7
Agripro 20	—	9-28	31	1.7
McKoy 1100	—	9-23	32	1.5
Asgrow 2440	20.2	9-25	34	2.8
Asgrow 2656	26.4	9-26	34	1.8
LSD =	not calculated			

Table 6. CALHOUN COUNTY.

Variety	Yield (Bu/A)	Maturity Date	Height (inches)	Lodging
Amsoy 71	31.9	9-19	36	1.0
Beeson	28.6	9-20	31	1.2
Coles	30.2	9-17	33	1.3
Corsoy	32.0	9-18	34	1.7
Evans	26.7	9-10	26	1.0
Hark	26.7	9-17	30	1.0
Harosoy 63	27.8	9-19	34	1.8
Hodgson	25.2	9-15	28	1.2
Steele	23.2	9-11	28	1.0
SRF 150P	27.7	9-15	29	1.0
SRF 200	29.0	9-18	32	1.0
Asgrow 2440	34.0	9-19	31	1.3
Asgrow 2656	34.0	9-18	35	1.5
Viking	24.0	9-21	32	1.2
Buccaneer	28.3	9-22	32	1.0
Gutwein 180	24.0	9-16	26	1.0
Agripro 20	28.1	9-22	32	1.0
NK S1474	30.2	9-21	31	1.7
NK S1492	28.4	9-20	26	1.0
Wells	28.9	9-19	30	1.0
LSD (.05) = no significant differences				

Table 8. TUSCOLA COUNTY.

Variety	Yield (Bu/A)	Maturity Date	Height (inches)	Lodging
Amsoy 71	32.3	10-1	36	2.0
Beeson	31.2	10-4	34	2.7
Coles	27.7	9-23	36	2.2
Corsoy	32.2	9-29	35	2.0
Evans	24.3	9-18	26	1.8
Hark	28.2	9-25	30	1.2
Harosoy 63	24.3	9-29	35	2.8
Hodgson	33.7	9-22	30	2.0
Steele	25.4	9-19	30	2.8
SRF 150P	28.2	9-26	30	1.2
SRF 200	29.1	9-30	34	2.2
Asgrow 2440	28.9	10-1	37	2.7
Asgrow 2656	34.4	10-1	34	1.8
FFR 111	23.3	9-30	35	2.3
Agripro 10	30.8	9-20	29	1.5
Jacques 98	33.5	9-28	34	2.0
Jacques 104	34.5	10-2	36	2.7
NK S1474	31.9	10-3	35	2.0
Viking	27.6	10-1	33	3.0
Wells	30.3	10-1	31	1.2
LSD (.05) = 3.5				

Table 7. MACOMB COUNTY.

Variety	Yield (Bu/A)	Maturity Date	Height (inches)	Lodging
Amsoy 71	13.9	9-30	27	1.0
Beeson	20.8	10-2	28	1.0
Coles	17.5	9-25	25	1.0
Corsoy	14.9	9-28	25	1.0
Evans	14.7	9-18	24	1.0
Hark	13.2	9-29	24	1.0
Harosoy 63	14.0	9-27	29	1.0
Hodgson	19.1	9-17	25	1.0
Steele	15.1	9-19	24	1.3
SRF 150P	16.6	9-27	23	1.0
SRF 200	13.1	9-30	27	1.2
Viking	19.0	9-28	26	1.0
Agripro 14	18.5	9-23	26	1.0
Agripro 18	18.7	9-30	27	1.2
Agripro 20	16.7	10-1	28	1.0
NK S1244	14.4	9-19	25	1.0
NK 51	14.9	10-1	27	1.3
Jacques 98	14.7	9-29	27	1.2
Jacques 104	17.8	9-30	27	1.2
Wells	14.6	9-29	26	1.0
LSD (.05) = 4.1				

Table 9. Seed Sources.

Source	Brand	Entry
Public Releases		Hark, Harosoy 63, Corsoy, Beeson, Amsoy 71, Hodgson, Evans, Steele, Coles, Wayne, Wells
ACCO Seed Company	ACCO	101, 201
Belmond, IA		
The Andersons	APS	150, 200
Maumee, OH		
Asgrow Seed Company	Asgrow A	1564, 2440
Des Moines, IA		2575, 2656
Dairyland Research	A	141, 143, 232
Kewaskum, WI		
Farmers Forage Research Cooperative (FFR Coop)	FFR	111, 223, 338, 1050
W. Lafayette, IN		
Ferry-Morse Seed Company	McKoy	1100
Genesco, IL		
Fred Gutwein and Sons	Gutwein	180
Francesville, IN		
Jacob Farms, Inc.	JFI	103, 104, 105
Blissfield, MI		106SB4, 112, 114
Jacques Seed Company	J	98, 102A, 104, 106
Prescott, WI		

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Seed Sources (Continued)

Source	Brand	Entry
North American Plant Breeders Ames, IA	Agripro	AP10, 10, 14, 18, 20, EX00330, EX00136
Northrup King Company Washington, IA	NK Blend, S	31, 42, 51, 52, 1244, 1346, 1474, 1492
Peterson Seed Division Grand Rapids, OH	P	0877, 3100, 105-P, 3105, P-85, 2877, 118-11, 2477, 1677
Pfizer Genetics Beaman, IA	Pfizer	CX155, EC179, CX275, CX276, CX290, CB200, CB244
Pride Co., Inc. Glenhaven, WI	Pride	B186, B216
Soybean Research Foundation Mason City, IL	SRF	150P, 200, 307P
Voris Seeds, Inc. Windfall, IN	VB, VS	VB100, VB120, VS135, VB200, VS245
V. R. Seeds Inc. Flora, IN		Beam, Buccaneer, Viking, V.R. 6028, Burr, Classic I

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